TECHNOLOGY NEEDS/OPPORTUNITIES STATEMENT

CHEMICAL ANALYSIS TO MEET WIPP
RH-TRU WASTE ACCEPTANCE REQUIREMENTS

Identification No.: RL-MW027
Date: October 2001

Program: Waste Management
OPS Office/Site: Richland Operations Office/Hanford Site
PBS No.: RL-CP02
Waste Stream: M91G
TSD Title: TBD
Operable Unit (if applicable): N/A
Waste Management Unit (if applicable): N/A
Facility: WRAP/M-91 Facility

***Priority Rating*:**

This entry addresses the "Accelerated Cleanup: Paths to Closure (ACPC)" Priority:

____ 1. Critical to the success of the ACPC
_X_ 2. Provides substantial benefit to ACPC projects (e.g., moderate to high lifecycle cost savings or risk reduction, increased likelihood of compliance, increased assurance to avoid schedule delays)
____ 3. Provides opportunities for significant, but lower cost savings or risk reduction, and may reduce uncertainty in ACPC project success.

***Need Title*:** Chemical Analysis to Meet WIPP Waste Acceptance Requirements (WAC)

Need/Opportunity Category: *Technology Need* -- There is no existing or currently identified technology capable of solving the site's problem (i.e., technology gap exists, no baseline approach has been identified).

***Need Description*:** Methods to identify wastes remotely for characteristic of ignitability, reactivity, or corrosivity, and possibly other chemical analysis requirements of the WIPP WAC (not yet issued).

Schedule Requirements:
Earliest Date Required: (10/01/06)

Latest Date Required: 2013

Problem Description: Currently, the CH-WAC contains prohibitions on wastes that are incompatible or exhibit the characteristic of ignitability, reactivity, or corrosivity. It is

expected that the RH-WAC will contain the same requirements when it is issued, and possibly requirements for additional chemical analysis. The operation of sorting and characterizing each waste package will be a time consuming operation that must be done remotely for operator safety. Locating and identifying these prohibited wastes is a significant part of that process, especially for the buried wastes where sketchy or no process records exists. Methods to identify these wastes quickly without isolating them and performing remote chemical analysis would have a significant impact on throughput. Conversely, methods to that would quickly confirm the absence of any of these prohibited wastes would be of equal or greater value. The 2013 date is when the M-91 facility is scheduled to be on line for processing RH-TRU waste.

Potential Life-Cycle Cost Savings of Need (in $000s) and Cost Savings Explanation: At this point in project definition, formal estimation of cost savings has not been made, but savings in operations costs could be significant and could potentially approach $5,000K.

Benefit to the Project Baseline of Filling Need: Reduction in operations costs and potentially a reduction of space/facilities that would be required to achieve the sorting and analysis throughput requirements

Relevant PBS Milestone: A2G-08-109 M-91-15 Complete Facilities/Initiate Treatment of RH/CH-LLW

Functional Performance Requirements: Currently, the CH-WAC contains prohibitions on wastes that are incompatible or exhibit the characteristic of ignitability, reactivity, or corrosivity and it is expected that the RH-WAC will contain similar requirements, and possibly requirements for RCRA-compliant chemical characterization. Methods to identify these wastes remotely with a minimum of operator actions would be a significant aid in increasing throughput.

Work Breakdown Structure (WBS) No.:	***TIP No.:***
1.02.02.04	TBD

Justification For Need:

Technical: Currently, the CH-WAC contains prohibitions on wastes that are incompatible or exhibit the characteristic of ignitability, reactivity, or corrosivity (in which case treatment, i.e., stabilization or removal of the item, would be required) and it is expected that the RH-WAC will contain similar requirements, and possibly requirements for RCRA-compliant chemical characterization. Methods to identify these wastes remotely with a minimum of operator actions would be a significant aid in increasing throughput.

Regulatory: Expected WIPP WAC requirements, see above.

Environmental Safety & Health: A reduction of operational steps is possible if technology can be developed and this would translate into less potential for operator exposure (ALARA).

Cultural/Stakeholder Concerns: Allows shipment of waste offsite instead of storage onsite.

Other: None identified.

Current Baseline Technology: N/A

End-User: Waste Management

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